## **QUINLAN SCHOOL OF BUSINESS**

# A Study on Truck Permitting & Routing Systems in Northeastern Illinois: The Economic Impact of a Streamlined System

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#### **Executive Summary:**

According to the Coordinated Truck Permitting Initiative report from July 11, 2014, "Hundreds of townships, municipalities, and counties regulate the trucking industry by identifying approved truck routes, issuing permits for overweight and oversize truck loads, regulating truck noise, and limiting acceptable hours of operation. The multiplicity of jurisdictions and the high degree of variability in regulations between jurisdictions adds substantially to the cost of trucking and the costs of the industries that the truckers serve."

Based on a recent survey, each of the seven counties in the region issues the following number of permits for OW/OS trucks. The figures do not include permits issued by the municipalities and townships within each county.

#### Number of Annual County and Toll Highway Authority OW/OS Permits:

0	Cook	2,500
0	DuPage	3,100
0	Lake	1,100
0	Kendall	1,000
0	Kane	2,100
0	Will	14,400
0	McHenry	1,000
0	Tollway	23,000

The objective of this paper is to study the economic impact of a streamlined truck permitting and routing system in Northeastern Illinois. The study is conducted by Supply Chain Innovation Network of Chicago (SINC) in partnership with the seven counties that comprise northeastern Illinois and the city of Chicago. This study is part of a project to improve the truck permitting and routing practices in the seven counties. In the first section of this paper, the economic impact of a streamlined system on the private sector will be discussed in details using real cases. Interviews with carries of oversized and overweight (OS/OW) shipments and recognized transportation associations were conducted to get insights on the costs that companies are incurring due to the fragmented truck permitting and routing systems and on the potential benefits of a streamlined system. The contact info of those companies were shared by Cook country, city of Chicago, DuPage county, Will country, Lake County, and the Toll Highway Authority (Tollway). A letter describing the project was created and shared with those companies. Phone interviews were conducted with a sample of 10 companies and 2 associations. Information, cases, and figures from each interview are presented and discussed in the paper. The second section addresses the benefits of streamlined systems on the public sector (issuers of permits). In this section, the results achieved by Oklahoma Department of Transportation and Texas Department of Motor Vehicle will be outlined. Finally,

the paper ends with recommendations to improve the OS/OW permit systems as currently exist in northeastern Illinois.

#### Economic Impact of a streamlined system on the private sector:

This section outlines first-hand information gathered directly from companies that carry OS/OW loads in northeastern Illinois and from recognized associations in the transportation industry. The sample used in the study includes 10 companies and 2 associations. The study used relatively diversified sample of companies (trucking companies, 3PLs, construction companies, etc.). The information was gathered through phone interviews with companies' transportation/fleet managers and associations' executives. Questions in the interviews focused on the costs incurred/ problems faced by companies due to the truck permitting and routing systems that are in place and on the potential benefits of a more streamlined system.

The following are summaries of each interview. Those summaries present cases and figures that explain the economic impact of the permitting process and procedures on businesses in the region. For confidentiality proposes, the paper will not include the actual names of companies and associations. This section will end with a conclusion of all those cases.

Company 1: Company 1 is a full service crane and equipment company. The company specializes in all size work from small construction projects to large industrial projects and maintenance agreements that span over several years. The company's specialties include Crane Services, Crane Rental, Man lift Rental, Crane Sales, Hoist Rental, Hoist Sales, Crawler Crane Sales, and Material Handler Sales.

The interview was conducted with three executives at the company. The transportation manager works 50 hours/week, 90% of which (45 hours) are devoted to truck permitting and routing. Of the 45 hours, he spends 25 hours searching for information such as "which local government has jurisdiction over which road?" "What are the weight/size restrictions, payment procedures, and application requirements at the various governments (state, counties, municipalities, and townships)?" etc. Given his salary only, the company spends about \$79,000/year on permitting in general and \$44,000/year on the information searching process. The executives estimated a cost of \$200,000/year for the whole permitting and routing process; this includes the direct and indirect costs such as idle time, delays, etc.

Every time the company requests permits from local governments, it suffers from trucks' and workers' idle time. These delays and idle time get bigger when the trucks carry super loads, which are

common for crane service companies. The estimated idle time is one day. Every one of the company's projects involves between 10-30 different companies; therefore, the idle time has a bullwhip effect, i.e. the one-day idle time at company is transferred to 10-30 different locations, spreading the inefficiencies over a very wide scope. In addition to trucks idle time, workers have to sit idle waiting for permits. The negative effects of these delays are not limited to the company's internal performances; they are also affecting customer satisfaction, and therefore, revenues.

The executives believe that a streamlined system will definitely lead to higher volume of permits requested from the various governments, i.e. the new system will lead to higher compliance. They also believe that the inconsistency of information is leading to unfair enforcement practices and that some local governments are using violation fines as sources of revenues. For example, the company got a verbal permit from the village of Ringwood at McHenry, but when the truck arrived to the road that belongs to Ringwood, the county's police officers stopped the truck and didn't accept the verbal permit; in addition, they informed the trucker that the road belongs to the county, and therefore, he needed a county permit. The executives at the company are so sure that the road belongs to Ringwood that they got an inappropriate ticket of \$12,000. The company also had to pay \$2000 for the attorney and \$1000 for the crane operator; moreover, the shipment was on Friday night, so the delivery was delayed until Monday. A one-stop shop system would have avoided this incident and many other similar incidents.

Due to the current systems the trucks are taking routes that are much longer than the ideal shortest routes. First, the company avoids sending trucks through certain local governments that are known for long permits turnaround time; the transportation manager also prefers using state routes as much as possible so that he avoids dealing with multiple permits. Second, the inconsistency of the restrictions and requirements among the different governments is also leading to taking longer routes; for example, the city of Chicago requires city permit in addition to the state permit for state routes that cross the city of Chicago. However, IDOT and City of Chicago have different weight/size restrictions i.e. the City of Chicago does not permit the movement of the trucks on state routes despite the fact that trucks have all the permits required by IDOT. The transportation manager almost always has difficulties when using such roads, and the trucks usually have to change the initial short routes; this leads to 2-3 extra driving hours.

This inconsistency is making scheduling and cost planning a difficult task. The same truck can be categorized differently in different local jurisdictions. Some loads are considered super-loads in one place but regular OS/OW loads in another. The information related to these restrictions are either unavailable or difficult to understand. This is making fleet management a cumbersome practice. Also, it is leading to

unintended violations due to unclear and complicated information. The executives believe that some legal authorities are aware that a significant portion of the violations can be attributed to the system's inefficiency; therefore, judges are almost always willing to cut fines in half. "Those judges know that fines are too high and that companies are forced to violate the law because the system is too fragmented and inefficient" said one of the executives.

As will be described later, customers of some trucking companies are reducing their OS/OW orders to avoid a longer lead time; however, this practice is not applicable in the crane industry because loads are not divisible. As a result, crane companies can either comply with the system and incur the costs associated with such inefficiency or violate the law and bear the consequences.

#### Company 2:

Company 2 is one of the Midwest's major logistics companies. It provides specialized intermodal drayage services, bulk agricultural loading, heavy haul drayage, international export, international delivery, 3PL services, freight forwarding, and brokerage.

Similar to other companies, Company 2 faces difficulties in finding out which county/municipality/township has jurisdiction over which road. The transportation staff spends about 20 hours per week gathering this information and contacting the various authorities. This information is also not fully clear for officers at the departments of transportation. Officers inform company's staff that the trucks have all the permits required for moving on a certain route, but only after the trucks are on the road, the staff realizes the need to get permits from a different local government. The lack of single point verification increases the risk of police fines and delays in delivery.

An inconsistency in pricing and types of permits adds to the costs incurred by the company. IDOT offers the option of getting 30 days permit for all state roads, but many counties/municipalities/townships don't offer a comparable option. For example, the company can get a 30 days permit from IDOT for \$250; on the other hand, permits from some local governments may cost about \$125/mile. Many local governments do not allow for long term permits.

The big difference in pricing, the need to work with multiple local governments, and the difference in size/weights restrictions across the various jurisdictions are pushing the company to avoid routing trucks on local roads as much as possible; as a result the trucks often take longer routes. For instance, a trip from Peotone to BNFS logistics park Chicago is about 26 miles, but when the company has to move an OS/OW shipment between these two destinations, it takes a 47 mile trip. The tendency towards

avoiding local roads and the strict OW/OS restrictions in Peotone are behind this costly practice. For this company, driving extra miles is less costly than dealing with too many jurisdictions.

As the volume of business increases these costs increase proportionally. However, the extra costs aren't always transferred to companies' customers in terms of higher prices. Competitors that require higher quotes for the services and products they provide are absorbing these extra costs. Consequently, Company 2 has to absorb them as well, and therefore, reduce its profit margin; otherwise, the company will suffer from lost revenue. According to the company's fleet manager, the inefficiencies, unreasonable and inconsistent pricing are incentives to ignore compliance with the law, which in turn leads to unfair competition. For some companies, the cost of police tickets can be lower than the cost of compliance, which includes dealing with multiple jurisdiction, delays, taking longer routes, etc.

Truck down time is not considered a big problem for this company because the manager was able to build flexible schedules that can adapt to contingencies such as unexpected delays in receiving permits. Nevertheless, the company fails sometimes in overcoming situations such as unexpected road construction or realizing the need for additional permits while trucks are already on the road.

The manager believes that this fragmented and inefficient system is affecting Illinois' transportation industry. He believes that a more streamlined system will make the state more attractive for businesses. For example, he thinks the TXPROS (Texas Permitting and Routing Optimization System) has made OS/OW shipments more efficient, and therefore, attract company interests to launch or expand businesses in Texas.

#### Company 3:

For over 30 years Company 3 has been providing specialized and local Less Than Truck Load (LTL) services throughout Chicagoland. Its business is focused in downtown Chicago; therefore, it requires more permits from Cook County than from other counties.

Due to the current permitting system, the company is suffering from huge delays in shipments. The fleet manager states that every time he wants to secure a permit or get a route, he spends a long time seeking the right person or agency to talk to and get information from; although ITAP (Illinois Transportation Automated Permits) explains where the company needs a local permit, it does not give all the local permitting and routing information. Another problem of concern is that the system is so fragmented that it is not surprising to encounter local agencies' staff who don't know which local government has jurisdiction on which road or bridge.

Another problem related to the fragmented system is the enforcement practices. Similar to local agencies' staff, local police officers don't have all the required information. Sometimes, the information that police officers have is different from the information included in the permits; this leads to contradictions and unnecessary inspections and delays. This fact is also acknowledged by Illinois Truck Enforcement Association (ITEA). The following notes are obtained from ITEA's website:

"The laws that regulate trucking in Illinois are complicated and extensive, which leads to enforcement that is not uniform across local boundaries. It is our goal to create standards of practice that correctly interprets the law while providing a baseline for consistent enforcement across jurisdictions."

"The trucking industry is burdened by the need to work within the differing policies and procedures of hundreds of municipalities and counties throughout the State of Illinois. We seek to build a central resource point for the trucking industry to provide a database of information critical to their operations."

"Legislation that affects trucking in Illinois has been long dominated by special interests. This has led to laws which are difficult to understand, and favors too heavily either the trucking industry or law enforcement. Our vision is to bring both parties together to influence balanced, common-sense legislation that meets the needs of trucking and satisfies public safety expectations."

As a result of these difficulties the fleet manager had to keep huge files of contact information, restrictions, regulations, routes etc. from every county, municipality, and township he worked with.

Nevertheless, these files did little to alleviate the problem. Local governments continuously change requirements and restrictions due to various reasons; in such cases, the company has to order different kinds of permits, and trucks have to take different routes. However, agencies don't notify the company with those changes; it is the company's responsibility to check every time it needs to secure a permit whether there are changes in the requirements in every local area. This causes a lot of burden and waste of time because the company has to check for changes in multiple jurisdictions. Although, some local agencies asks the company to provide contact information in order to notify it with changes, the contact information is automatically deleted from the system if the company does not request permits for a certain period of time. For example, if the company does not request permits from a certain local government for three months, it will no longer be notified with changes, and it has to go through the process of searching for changes all over again.

The difficulties don't end after gathering the needed information; for every trip that requires multiple permits, the manager has to fill multiple forms and pay fees to different parties that might require different methods of payment and different forms of applications.

According to the fleet manager the bottle neck in this process is dealing with local agencies; since it is much easier for the company to get permits and routes from IDOT than from local agencies, it avoids, at all cost, sending trucks on local roads and bridges. Consequently, trucks don't take the shortest routes in most cases. Based on the manger's estimation, taking longer routes is costing the company \$10,000 to \$20,000/year. This includes the costs of drivers, fuel, trucks depreciation, etc.

The time required to get an OS/OW permit from the various local governments varies depending on the size and weight of the truck and on the route it needs to take. The average permit turnaround time is one day. This lengthy time is increasing the risk of trucks setting idle. Every truck costs the company a \$1000 dollar per day, and in some cases, the trucks stay idle for a whole day. The cost of trucks' downtime per shipment ranges from \$100 to \$1000, and the average annual cost of trucks downtime ranges from \$10,000 to \$15,000.

Another negative impact of the current system is related to non-uniformity in the levels of compliance among trucking companies; this non-uniformity leads to unfair competition and loss of business for the company. Due to the difficulties associated with the fragmented systems, some trucking companies are using local roads without applying for the required permits; this is giving them a competitive advantage over Company 3. Those companies are offering customers faster deliveries, but customers are not commonly aware of the business practices adopted by each company. Consequently, some of them are shifting business from Company 3 to those companies that are not complying with the law.

Excluding the permit fee, the average cost that the company incurs in order to secure a permit is \$50 (approximately \$5000/year). This includes the cost of personnel, phone calls, faxes, etc. The average permit fee for the company's OS/OW loads is \$50. It is clear that the permit fee is a minimal expense when compared to other costs incurred and time wasted due to inefficiency and fragmentation in the system; according to the manager, if trucking companies can get their permits and routes from one stop shop, they will be willing to pay 100% more in permits' fees, "permit fee is nothing comparing to the money and time we are losing due to inefficiency" said the manager.

Finally, he believes that a streamlined system will increase the sales of large equipment. Now customers avoid buying large pieces of equipment because moving such equipment needs permitting, and therefore, will be associated with long delays in delivery time.

#### Company 4:

The company provides complete Transportation Services through an Integrated Logistics Management Program throughout the United States, Canada and Mexico.

Given its wide scope, the company needs permits from almost all the state and local governments in the Chicago land area. According to the transportation manager, the permits turnaround time is about one day at various counties, municipalities, and townships and 5 days at the toll way. He believes that the turnaround time is not the most significant problem of the permitting and routing systems; instead, the time and manpower devoted to get the needed information is considered the most difficult part of this process. Every time the company needs a permit, he needs to make 4-5 phone calls and spend 4-5 hours searching for information. This time is costing the company about \$30000/year. In addition, the company is always suffering from truck idle time. Given the variety of services provided, the company relies heavily on accurate planning and cost estimation. However, this critical task of pricing loads has become very complicated due to the confusing and inefficient permitting system.

As in other cases, the lack of accurate and integrated information is imposing significant costs on this company. For example, the transportation manager decided to route one of his shipments on state route only because it is much easier to use the ITAP system. However, when the truckers got closer to the destination location, they found out that the road has under passes that belong to CTA. The vertical clearance of the underpasses was low, so the trucks had to take a very long route in order to get to the destination location. The truckers were supposed to drive 60 miles according to ITAP information, but they ended up driving 200 miles because they couldn't move the trucks under the underpasses.

According to the manager, the main problem was that ITAP did not provide any kind of information related to the CTA's underpasses. Had the manager known such information, he would have routed the trucks on a different route that is much shorter than 200 miles. The company incurs about \$18/mile for each truck. The lack of data integration among the various authorities is leading to many problems similar to this one.

#### Company 5:

The company is a heavy high way contractor. Their public works clients include: The Illinois Department of Transportation, The Illinois State Toll Highway Authority, The City of Chicago, Cook County Highway Department, The Chicago Transit Authority, and METRA.

The company gets most of its permits from DuPage county and the toll way. The transportation manager spends about 10 hours per week on the permitting process. These hours are costing the

company about \$40,000/ year. He believes that a one-stop shop system will reduce the amount of work on permitting by 50%.

According to the manager, the permit application process is very old fashioned and inefficient. For example, the systems at many of the local governments do not allow him to store the information for recurring shipments. He needs to reenter the information every time even if the shipments are identical. The time needed to fill the applications and contact the departments of transportation becomes larger and more costly when the trucks use local roads.

The need to comply with multiple permitting restrictions and regulations is one of the biggest obstacle this company faces. For example, in order to move the trucks from the village of Gilberts to Cook County, he needs to deal with at least 5 different permits (Toll way, Kane, IDOT, DuPage, and Cook). Given the inefficiency of the systems at some of those jurisdictions, the company suffers from huge waste of time.

This company is doing better than other companies in managing the information search process and truck/workers idle time. However, the manager stated that it took him and his staff a long time to build flexible schedules and accumulate knowledge about the jurisdictions. This implies that startup companies with less experience must be having big problems with regards to these issues.

The manager tries as much as possible to avoid bottle necks in the permitting process. One of those bottle necks is the toll way system. Most of the company's loads are super loads, and the toll way needs very long time to issue super loads permits (4-5 days); whereas ITAP takes about 4-5 hours to issue super loads permits. Therefore, the trucks are forced to take longer routes to avoid the toll way roads. For example, one of the recurring trips is from Gilberts to Indiana boarders. The routes that trucks usually take is 50 miles longer than the shortest route which requires a toll way permit.

The manager is very satisfied with Kane County's new agreement with the townships. However, he believes that this agreement should be expanded to include all local governments. For example, the village of Sleepy Hollow is not part of the agreement, and it takes very long time to issue permits; as a result, he avoids roads in this village. In general, he considers Kane County the most efficient among all the 7 counties.

#### Company 6:

Company 6 is a Chicago-based general contracting, construction management, and design-build firm. It has experience with a wide variety of building, civil, and transportation sectors, and it uses multiple kinds of trucking transportation such as LTL, flat, etc.

The company focuses its operations in the metropolitan Chicago area. It requests permits mainly from IDOT, City of Chicago, and Cook County. According to the fleet manager, the company tries to avoid sending trucks on roads that belong to local governments because it has to deal with different agencies, OS/OW restrictions, and payment and application procedures. Therefore, he tries, as much as possible, to route trucks on roads managed only by City of Chicago, IDOT, and Cook County. He states that the company does not prefer to work much with Cook County because of its inefficient system of permitting and routing; however, he has noticed some improvements in the system at Cook County recently.

Another difficulty is that for some loads, especially loads exceeding 120000 pounds (Super Loads), he needs to get permits from IDOT and the toll way agency separately. The company has been satisfied with the system at City of Chicago so far, and the manager believes that it is better than those at IDOT and Cook County.

The company needs to wait for 4-5 hours, 5-6 hours, and about 12 hours to get permits from City of Chicago, Cook County, and IDOT respectively. Surprisingly, IDOT has the longest turnaround time despite that ITAP is more automated than the other two systems. The manger attributes that to the separation between IDOT and the toll way systems and to the greater flexibility of the system at the City of Chicago.

Although the trucks at Company 6 are forced to take longer routes in order to avoid dealing with inefficient and fragmented local systems, the manager does not believe that this is imposing significant cost on the company. He attributes that to the concentrated and limited scope of the company's operations (Their business is concentrated in the City of Chicago and Cook County). The limited scope makes the differences between the routes the company uses and the shortest routes not significant. However, these differences will become larger and more noticeable as the company expands its business to larger geographic areas. The extra cost associated with the personnel, phone calls, faxes, etc., required to get the permits is about \$5000 per year.

The manager believes that integrated systems among IDOT, the toll way, the City of Chicago, and Cook County can be very helpful and make the movement of freights much easier.

#### Company 7:

Company 7 is a nationwide services contractor to the railroads, general industry and government. The company's headquarters is located in Denton, Texas, and they have 35 divisions located across the United States, Canada and Mexico.

One of the daily problems that the transportation manager faces is the need to secure multiple permits for each shipment. On average each load needs 5 different permits. About 50-60% of his time is devoted to the information search process. According to the manager a streamlined/one stop shop system would save 50% of his time. For example, after implementing more streamlined systems both in Virginia and in Maryland, he noticed 50% reduction in the time and money the company spends on permitting at those states.

Based on the manager's estimation the average permit turnaround time is one day. However, super loads permits need much longer time (up to 2 days). Since most of the company's loads are super loads, the transportation department had to innovate in order to overcome the inefficiencies with super loads. For example, IDOT considers any vehicle that has more than 6 axles a super load; therefore, the company changed the design of part of its fleet so that trucks have 6 axles instead of 7 axles and can carry the same weight. The company paid \$26,000 for the new design. However, if regulations change, the company will lose all of its investment. According to the manager, if there were a streamlined system, the company would not invest in such project; instead, this money would be spent on more productive practices.

One of the biggest disadvantages of the current permitting and routing systems is the lack of real time information. For instance, in a trip to the village of South Holland, the trucks had to stop for 5 hours due to unexpected road maintenance. The company had already promised its customer a fast delivery, but when the delivery was delayed, the customer contacted a nearby competitor, and Company7 lost the business. In other similar cases, the company provides discounts to customers, which are considered extra unnecessary costs.

Although IDOT provides an informative map "Getting around Illinois" that contains some information related to local roads, the map is not helpful in truck routing and permitting. The map gives information about the local government that provides utility services for each road not about the local government that has the jurisdiction to issue permits over each road.

Automation and less paper work will have positive impact on the company's transportation department. The hard copies and faxes requirements are cumbersome and add to the delays of tasks.

#### Company 8:

Company 8 is a construction contractor. The company self-performs the complete foundation construction scope from site surveying to drilling; the company's operations include heavy hauling, rebar cage construction, drilling, concrete placement, concrete pumping, etc.

The company gets most of the permits from IDOT and Kane County. The transportation manager believes that lack of communication between the various jurisdictions in the region is making the permitting and routing process very time consuming. The lack of information about roads and bridges ownership is leading to inefficiencies whenever the company needs OS/OW permits. The most significant inefficiency is trucks' downtime, which includes time to gather the needed information and permit turnaround time. Average permit turnaround time is 4 hours.

According to the manager, permits from IDOT take relatively longer time because of the high volume of permits requested. Kane County used to be the most efficient among all counties in the region; however, the retirement of some experienced staff has led to less efficiency in the process. Cook County is the least efficient in turning permits in timely fashion.

The company tries to avoid sending trucks on roads under the jurisdictions of municipalities and townships due to similar reasons mentioned above; therefore, the manger did not notice substantial changes after the agreement between the county and townships at Kane County. Nonetheless, he stated that the agreement gave him incentive to work more with those townships.

Excluding permit fees, each permit is costing the company about \$200-\$250 (cost of personnel, phone calls, faxes, etc.). This is a big figure relative to costs at other companies. It seems that this company is not doing well in managing scheduling and cost, and the inefficiency of the permitting and routing systems is adding insult to injury.

#### Company 9:

According to the transportation manager, Cook County takes the longest time to issue permits, and Kane County is the fastest; the average permit turnaround time is 5 hours. The company works with many townships at Kane, so the new Kane agreement had very positive impact on the efficiency of the company's freight movement. Excluding permit fee, each permit costs between \$10-\$50 (Personnel, phone calls, faxes, etc.)

The long turnaround time and non-uniformity in OW/Os restrictions and payment and application procedures is slowing the pace of the company's operations. The company avoids routing trucks on local rods.

The manager believes that uniformed template for permits would make his job much easier. Also, he believes that one stop shop will save about 30% of his time. He suggest that ITAP incorporates all the local permits and routes.

#### Company 10:

The company requests and gets permits mainly from IDOT. The transportation manager spends at least 5 hours to get a permit. According to her experience with IDOT, the department is becoming more and more overwhelmed with high volume of permits. This is reflected in low quality of customer service. Many times, she had to wait 30-40 minutes in order to get one inquiry about permits. She also experienced some difficulties using the ITAP system; she believes that it is not user friendly.

#### Association 1:

Association 1 is an international trade association of nearly 1,300 member companies from 43 nations. Members are involved in specialized transportation, machinery moving and erecting, industrial maintenance, mill righting, crane and rigging operations, manufacturing and rental.

The executive at Association1 considers the inefficiency in truck permitting and routing systems as a major cost for the private sector. He addressed the following issues:

1. Accessing appropriate local officials: in order for the truck to move from point A to point B, it needs from 4 to 12 different permits. Finding out where to send the application and contacting the

- different authorities is very time consuming and slows down the movement of freights in the region.
- Uncertainty about permits turnaround time: whenever there is a need to get local permits, there is
  uncertainty about turnaround time and delays. This is affecting the planning effort in
  transportation industry and in other related industries such as manufacturing, construction
  materials producers, etc.
- 3. Excessive fees: local permit fee is very high in comparison to state permit fee.
- 4. Safety: excessive fees and inefficiencies are leading to lower compliance. This is increasing the risk of safety hazards and the costs that companies incur (fines).
- 5. Lower profitability in many industries: the extra costs incurred by carries are transferred to customers. Companies in almost all industries use truck transportation. Therefore, the extra costs are affecting the profitability margins everywhere in the economy.

#### **Association 2:**

Association 2 is a professional organization dedicated to serving police officers who specialize in truck enforcement, the trucking industry itself, and attorneys who prosecute and defend truck cases.

The executive at Association2 believes that the current multiple systems are causing problems and downtime in trucking companies' operations. The hundreds of ordinances, procedures, weight and size restrictions, and fee structures are not complied in one system; therefore permitting and routing have become cumbersome practices for police officers, local agencies, and trucking companies. In addition, he thinks that a more centralized and streamlined system would increase compliance by trucking companies.

Despite its benefits, a centralized system where trucking companies can apply for one set of permits that apply across all local governments is not applicable according to the executive. He believes that political and organizational issues inhibit such a system to be created. However, he suggested that a vertically integrated system can be a good alternative. This system would compile and integrate all the ordinances in one place, but every jurisdiction will be responsible for its own ordinances. Law enforcement officers from various local agencies would have access to the system where they can apply and change restrictions to the bridges and roads related to their regions.

#### Summary and conclusion of the interviews:

As described in the cases mentioned above, the fragmented truck permitting and routing systems are imposing significant costs on the private sector. Shippers, carriers, and receivers of products in the

Chicago land area are affected by this inefficiency. Below is a list of the most common costs/problems due to permitting and routing practices:

- 1. Delays in delivery
- 2. Low customer satisfaction
- 3. Lost revenue
- 4. Trucks and workers idle time
- 5. Driving longer routes (cost of fuel, cost of equipment, driver expense, etc.)
- 6. Violation fines
- 7. Cost of personnel
- 8. Burdensome difficulties in cost and schedules planning
- 9. Excessive and duplicate data entry on permit applications

Yet, the most significant costs are related to time spent on searching for information and understanding restrictions and regulations that are the costs of compliance. This implies the need for an integrated data base/one stop shop system that includes information from all local and state governments and allows truckers to request and receive permits from one place.

The non-uniformity of restrictions and procedural requirements are the major sources of planning and violations problems. This increases uncertainty about restrictions and turnaround time; with such uncertainty companies are not able to plan for their shipments ahead of time. These difficulties are leading to intentional and unintentional violations.

It is clear that companies are willing to incur extra costs such as driving longer routes in order to avoid long permit turnaround time, which is associated with trucks/workers idle time. However, this is leading to delays in deliveries, and therefore, to lower customer satisfaction and lost revenue.

None of the companies we interviewed seemed to be satisfied with the current systems; all of them are having problems and incurring extra costs, which differ according to companies' sizes and types of shipments. The transportation industry is interrelated with almost every other industry; consequently, the delays and slow movement of trucks are hampering the growth and business processes in a large sector of the economy.

The below list presents potential benefits of a more streamlined system:

- 1. Higher productivity level
- 2. Easier and more flexible scheduling
- 3. Lower labor cost, especially those associated with the cost of compliance
- 4. The way customers do business would change. Reducing barriers to moving product and equipment could improve the flow of commerce and increase sales of large equipment by removing the disincentives associated with "work around" solutions.
- 5. The companies would be able to move trucks on the shortest and direct routes, which will increase efficiency and reduce costs.
- 6. Trucks/ workers idle time will be reduced.
- Higher compliance with the law, which will lead to greater safety, less deterioration in infrastructure, and fair competition among firms.

#### Economic Impact of a streamlined system on the public sector:

This section presents the results and advantages achieved by the departments of transportation at two states that implemented fully automated and integrated systems.

The following are the results achieved by the Oklahoma Department of Transportation (ODOT) after the introduction of streamlined permitting in 2011:

- 1. Before implementation of Intergraph's OS/OW solution, the manual permitting process took one to three days to complete. Now, the total permitting process takes an average of 12 minutes to finalize.
- 2. Auto approval permits increase by as much as 55% to 59%, which means 55%-59% of the permits are being issued within a matter of minutes instead of a matter of hours or days.
- 3. In the first six months of operation, the department processed 141,918 permits; in the first ten months, 201,000+ permits were issued and 250,000+ permits were processed. First year's estimate is 283,836 permits processed that's approximately 15 percent more permits in comparison to highest annual numbers in prior years. This implies a more efficient and streamlined process resulted in a substantial increase in the level of compliance.
- 4. This system generated 10% more in revenue than the previous highest annual numbers (first year revenue estimate is \$42,299,155.24). The revenue realized by the increase in compliance was sufficient to have almost paid for the streamlined permit project in the first six months (first six months revenue was \$21,149,577.62).

- 5. Customers used to stay on hold for 4-5 hours before implementing the new system. The first six months evaluation revealed that the longest hold period for a phone call was 30 minutes during the peak time between 9am-11am; after 4pm there were no permits in the queue and no customers on the phone.
- 6. OS/OW officers used to work from 7am to 7pm. After the six months evaluation, the agency decided to change the working hours and open from 7am-5pm; officers started working in one shift instead of two shifts. However, there were no layoff; instead officers were combined in one shift due to the increasing efficiency. The OW/OS division is also studying the possibility to open from 7:30 am to 4:30 pm.

Below are the positive impacts of the streamlined system in Texas (TXPROS) introduced in 2012:

- 1. Ability to disseminate critical information between customers, Texas Department of Motor Vehicle (TxDMV), and other agencies quickly.
- 2. Real time vs static routing and restriction management.
- 3. Better customer service by reducing routing and permits issuance time. Permits specialist are able to focus on more difficult and time consuming permits such as super heavy loads. In addition, specialist increased response time to assist phone customers. TxDMV handled 179,402 OS/OW permits phone calls in fiscal 2012, exceeding the 129,990 phone calls for fiscal 2011 by 38%. The phone calls average hold time was reduced by 50.7% between 2011 and 2012 (11.67 minutes in 2011/ 5.75 minutes in 2012).
- 4. TxPROS provides TxDMV with data on OS/OW roadway usage to more accurately project future demand and maintenance and findings needs.
- Higher volume of permits/ higher revenue: TxDMV issued 590,980 permits in fiscal year 2011, more than any other state, and issued 741,080 permits in fiscal year 2012, a 25.4% increase for the year. TxDMV collected \$146,994,766 in permit fees in fiscal 2012, exceeding the 113,349,391 collected for fiscal 2011 by 29.7%.
- 6. TxDMV realized positive return on the \$1.6 million investment in less than a year.
- 7. Cargo moves quicker for shippers and receivers.
- 8. Higher compliance by trucking companies.
- 9. Eliminates human error
- Reduces risk to the public and infrastructure by analyzing routes and improving routing accuracy.
   Results in decrease infrastructure wear and tear.

#### **Recommendations:**

Based on all of the information discussed above, we can conclude that the truck permitting and routing systems in northeastern Illinois should be improved to allow smoother and faster flow of products in one of the world's premier transportation hubs.

The need for action becomes an even more obvious economic imperative for the region when recognizing the Bureau of Labor Statistics reports that transportation and logistics comprise the second largest employment sector in the nation. Transportation and logistics is similarly important to the employment base of northeastern Illinois.

In the era of an ever evolving and highly competitive global supply chain it is critical that the Chicagoland region recognize its advantages and simultaneously embrace the changes that will likely prove the differentiators between those who are complacent and those who are innovators and eager to embrace progress.

Numerous jurisdictions, both in the United States and around the world, have already taken steps to reduce barriers to the speedy movement of goods by implementing streamlined truck permitting procedures. It is a recent phenomena for much of the activity has been undertaken in just the last five years. Consequently, the Chicago region's status as the world's premier inland port is at risk if steps are not taken to maintain the region's reputation as a favorable location for transportation, distribution and logistics.

Gary Forger of the Material Handling Institute is a prominent speaker on the national scene on behalf of "Modern Handling & Logistics U.S. Roadmap". He speaks of ten core competencies. Four of the competencies that he considers key to the future of material handling and logistics are particularly appropriate when considered within the context of this research paper. They are: 1) collaboration; 2) high speed delivery; 3) standardization; and 4) technology and automation.

The problems and cases discussed in this paper demonstrate the need for *collaboration* among governmental bodies in order to bring greater efficiency to the movement of oversized and overweight trucks.

Reliable *high speed delivery* is a measurable benefit to the region's economy. Streamlined truck permitting speeds delivery and improves the timeliness of arrival for their valuable cargo.

The most significant costs incurred by private sector companies that rely upon government approvals to move freight are related to time spent searching for information, understanding restrictions and regulations, filing multiple repetitive applications and substantiating jurisdictional "ownership" of the roads to be traversed.

Approximately 300 independent governmental jurisdictions in northeastern Illinois have permits, laws, ordinances, codes and restrictions that influence truck movements. It should be self-evident that a movement towards greater *standardization*, uniformity and consistency would significantly reduce redundancy, inefficiency and complications inherent in current procedures.

The *technology* exists to facilitate greater integration and *automation* of the permitting and routing procedures. The introduction of interactive and compatible technology across multiple jurisdictions will be a challenge for the region.

The appropriate goal to be undertaken is a move towards implementing a multi-jurisdictional "one-stop shop" for truck fleet managers and "real time routing" for drivers.

The large number of independent jurisdictions within the Chicago metropolitan region with influence upon the truck permitting process makes this goal challenging and costly; however, the potential positive impacts of a new system justifies the effort and its costs.

While the transition will no doubt take time the system improvement process can be undertaken gradually and simultaneously. The most impactful approach would be to concentrate efforts to implement consistent technology that moves from faxes to on-line procedures throughout the region. Integration of the Illinois Department of Transportation and the Illinois Toll Highway Authority systems to bring compatibility to permitting on these primary highway systems should be a high priority. The volume of permits required in Cook, DuPage and Will counties suggests attention should be directed towards streamlined permitting in these jurisdictions in order to affect the greatest number of vehicle moves. Finally, the successful achievement of intergovernmental cooperation in Kane County to streamline truck permitting by the county and townships holds promise for other jurisdictions to replicate.

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